

CLAIMS

1. A method for treating waste water by a membrane  
bioreactor comprising a sludge dewatering step and  
5 a recycling, to the head of the bioreactor, of the  
liquid effluent from the sludge dewatering,  
characterized in that:
  - the biological sludge extracted from the  
bioreactor (1) is contacted with the liquid  
10 effluent from the sludge dewatering step, so  
that the residual content, in said effluent, of  
polyelectrolyte used to condition the sludge  
during the dewatering step (4) moves toward the  
biological sludge;
  - 15 - the biological sludge is separated from the  
liquid effluent so as to produce a  
polyelectrolyte-free liquid effluent, on the one  
hand, and a polyelectrolyte-loaded biological  
sludge, on the other hand;
  - 20 - the polyelectrolyte-free liquid effluent is  
recycled to the head of the membrane bioreactor,  
and
  - the polyelectrolyte-loaded biological sludge is  
sent to the dewatering step.
- 25 2. The method as claimed in claim 1, characterized in  
that the biological sludge is separated from the  
liquid effluent by filtration on microfiltration  
or ultrafiltration membranes (3), the cutoff  
30 threshold of said membranes being significantly  
lower than the molecular weight of the  
polyelectrolytes used during the sludge  
dewatering.